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CHRONIC MYOCARDITIS.

Some Remarks on Its Pathology, Symptoms and Treatment.

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The frequent occurence of sudden death from heart lesions in those who have apparently enjoyed robust health and in whom the presence of such disease has been unsuspected, the great diversity of contributing etiological factors and the too frequent paucity of autopsy findings, contribute to excite the interest and prompt a more painstaking and closer study of a type of cardiac disease so frequently latent as to symptoms, but so appallingly sudden in the exhibition of its lethal power.

It is to be regretted that the past few years have contributed so little toward an advancement in the pathology of the type of myocardial degeneration, known as myo-fibrosis. While several very able papers have been contributed on experimentally produced myocardial lesions, they have not materially contributed to a more thorough comprehension of their pathology and while the pathology of endocardial lesions is at present the time amendable to a fairly definite classification and a correspondingly definite symptomatology, the mechanism of fibroid degeneration is still veiled in obscurity.

It has been observed that in cases that have died suddenly from heart failure that not only has the pathology of the heart muscle varied within wide limits from those exhibiting pronounced fibretic changes and extensive areas of degeneration, to those in which macro- and microscopic inspection alike fail to demonstrate a process sufficient to cause death—in which, in fact, the heart is without evidence of any diseased condition. It is these facts, the

KANSAS STATE

lack of physical confirmatory symptoms and frequent latency of the condition that arrest the attention and invite the interest of the student in these processes.

In a majority of cases coming to autopsy following sudden death from myocardial disease of the chronic type, evidences of degenerative arterial changes are present. In fact, it may be said that endarteritis, atheroma and arteriosclerotic changes both diffuse and nodular accompany myocardial disease with such frequency as to be almost looked upon as an integral part of the general process, but in a considerable number of cases, they are not present while the absence of change in the myocardium in cases of pronounced arterial degeneration is frequently noted.

As to the nature of the myocardial change itself, the opinions of pathologists vary. It would seem that a consensus of these, however, regard the term "myocarditis", as used in a general sense, a misnomer. Inasmuch as evidence of an inflammatory process per se are usually wanting, the condition may be looked upon as purely degenerative, neither conservative nor protective except from a relative standpoint and is in all probability, initiated by an ischaemia of the heart musculature primarily due to arteritis of the coronary vessels.

The natural tendency of any tissue deprived of sufficient blood supply is toward degeneration, which in the heart, must result in impaired dynamic efficiency as it is never permitted to rest or relax, naturally resulting in a dilation resembling primarily physological relaxation of the muscles.

The conservative forces of nature have determined that the blood supply is insufficient to nourish the heart as a purely muscular organ, are forces to permit certain degenerative or metaplastic changes wherby certain groups of muscle fibres undergo sclerotic changes, and are supplanted by a type of tissue that is non-participating in the vital functions, requiring a minimum of nutritional supply thus evidencing the effort of nature to reduce the amount of muscular tissue to that which may have an efficient blood supply.

While the heart exhibits an increase in size macroscopically, there is a relative diminution in dynamic force or in actual contractile muscular tissue. And arteritic processes in the coronary arteries are usually subacute or chronic in character resulting in gradual narrowing of the vessel. This is most commonly manifested in the anterior coronary artery as a slow obliterative process in the trunk of the vessel, or by occulusion of its opening by atheromatous plaques in the aorta, or its manifestation may be sudden and fatal from embolism or thrombosis occuring in a nar-

rowed vessel and favored by a sluggish current or heightened blood pressure caused by diminished caliber of the vessel. The anterior coronary artery being longer, smaller, and more tortous as well as more active than the posterior, is most frequently involved, therefore the parts directly supplied by this vessel, i. e., the left ventricle, interventricular septum and papillary muscle show the greatest and most constant pathologic changes.

In cases exhibiting more acute coronary obstruction, the condition which Zeigler has described under the term ''Myomalacia Cordis'', occurs. In this condition, the heart becomes rapidly ischaemic pale yellow in color and irregular areas exhibiting necrotic changes occur which are swollen and prominent. The degeneration of the muscle fibres is rapid and marked, they become fragmented and their neuclei disappear, sudden and alarming symptoms of dilitation and insufficiency appear.

Sudden death is the rule in these cases but in those who recover the necrotic area is replaced by a tissue resembling connective tissue which may resemble the terminal product of an inflammatory process, but which must be regarded as a sclerosis or dystrophy as the evidence of inflammation is wanting.

The occurence of true chronic myocarditis following acute inflammation of the myocardium primarily due to the toxemia of acute infection may be conceded. Whether acute myocarditis itself is due to the direct action of toxins on the heart muscle, or to acute arteritis, as taught by the French schools,is a mooted point, but as Koester has found that myocarditis may occur from uncomplicated valvular lesions, in which the compensation has been disturbed, and in which he has attributed the lesion to dilitation, we may accept the thoery of Dehio that myofibrosis is a result of dilitation, this dilitation resulting in a lengthening of the blood channels and a mechanical lessening of their caliber.

As to the causes operating in the production of compensatory failure, opinions again differ.

Saltykow (Virchow's Arch. band. clxxxli) considers the fibrous deposits the direct results of old infarcts from disturbance of the myocardial circulation. Dehio and Krehl have attributed the failure of compensation to deposits of connective tissue between the muscle fibres which not only weaken the muscular structure, but mechanicallly embarass the contractile power of the heart. This view, however, is not sustained in all cases by the autopsy findings and is disputed by many able pathologists as shown by Gennari (Arch de le sci. med. Dec. 1905) .

If one were to accept the theory or the myogenic origin of the

hearts activity, that impulses governing its action originate in the bundle of His, the mechanism of sudden cardiac failure might hypothetically be ascribed as due to invasion of this area by sclerotic processes and interference with the conductivity of motor impulses, resulting in the dreaded asystole.

The analogy of the pathogenesis of myofibrosis with the Stokes-Adams syndrome holds good even from the view point of those who contend that the latter phenomena is due to sclerosis of the vessels of the bulb.

For instance, age, sex and manner of life form an etiological standpoint; the cardiac and arterial degeneration with special reference to involvment of the interventricular septum, which contains in part, the bundle of His, from a pathologic, the suddenness of the attacks preceded by pallor, muscular relaxation, syncope and almost complete cessation of the heart's action typifying a case of sudden death from cardiac failure, from a symptomatic, are truly striking, only in the one consciousness does not return and the contractile impulse being too long delayed or utterly suspended, the heart's action is immediately and permanently arrested, while in the other, its function is but temporarily inhibited and is resumed after a short interval, though its rythm is disturbed, resulting in pronounced bradycardia and auricular fibrillation.

As the first attack of angina pectoris may terminate fatally or if not, is regarded merely a symptom of myocarditis, so the primary shock of heart block to the cardiac innervation may result in sudden death, or, if recovery occurs, may be regarded more as a symptom of myocardial change than as a definite pathological entity. In view of the fact that our present knowledge of the mechanism of sudden death in myocardial degeneration without rupture is practically nil, this conclusion tentatively reached might appear tenable.

A study of the symptoms of this condition is one of vital interest, inasmuch as early regulation of the patients' life and habits may avert a sudden fatality. The physician is handicapped by the fact that so many cases are latent and are never even suspected until some sudden strain or excitement results in sudden failure and death.

On the other hand these cases that come under observation are usually merely characterized by symptoms of chronic cardiac insufficiency without, as a rule, defined symptoms pointing to involvment of the myocardium.

The symptoms directly referrable to the heart are feelings of precordial oppression, or dull pain, frequently with true anginal

attacks, disturbance of compensation resulting in breathlessness on slight exertion, slight cyanosis due to interference with the pulmonary circulation, bronchitis, hydrothorax, pulmonary oedema and dyspnoea or orthopnoea frequently of nocturnal type. To these are frequently added a train of marked digestive disturbances.

Embolism and infarction are common in mixed lesions. I recently observed a case in which the clinical symptoms of splenic infarction occurred twice and in whom the right radial pulse was totally obliterated for six weeks before the final termination.

It may be safely said that an absolute diagnosis is seldom arrived at during life as the symptoms are vague and inconclusive and those of fatty heart, pericardial adhesions and occasionally valvular stenotic lesions simulate it so closely as to permit only of a tentative diagnosis.

The conditions which may be said to favor a diagnosis of chronic myocardial change are in the order of their importance.

a. Arteriosclerosis whenever found if accompanied by symptoms referable to the heart in the absence of phenomenon pointing definitely to endocardial involvement.

b. Dyspnoea and evidence of pulmonary stasis if unaccompanied by murmurs that can positively be identified as valvular (though murmurs due to relative mitral or aortic leakage may be present from cardiac or aortic dilitation and require close study before they may be excluded).

c. The relative strength of the aortic and pulmonic second sounds. These sounds are the most constant in their alteration and may really be considered of value from a differential stand point.

While the heart tones are modified not alone by incidental murmurs, due to dilitation and relative valvular insufficiencey, but also by alteration in blood pressure and disturbances of co-ordination of the heart muscle, though in some cases the heart tones may be clear throughout and are usually so in the inception of the process, faintness of the second aortic and accentuation of the second pulmonic have been noted with such constancy as to be regarded as characteristic of this type of lesion.

d. Blood pressure depends entirely on the state of compensation but is usally high because of arterial involvement.

e. The variability of the pulse makes it of slight value in determining the character of the lesion. In many cases there is arrythmia of a paroxysmal type. Persistent bradycardia may be observed throughout and when accompanied by syncopal attacks is highly suggestive though not conclusive. In many cases (Ebest,

eim) a regular pulse may be present while rapidity prevails in a majority of cases.

f. The cardiac reflex of Abrams is not elicited in the advanced type.

A contemplation of our present methods of treatment is by no means satisfactory. There seems to be no direct treatment of the established conditions,whatever of therapeutic effort has been expanded seems to have been directed toward the correction of the most common causal factor, i. e. arteriosclerosis.

As has been stated, in reviewing the pathology of this condition, arteriosclerosis, while a very frequent accompaniment of myocarditis, is by no means always demonstrable nor is it, except with references to the coronary arteries, essential, nor does its demonstrable presence in peripheral vessels determine myocardial disease as existing.

This uncertainty with the fact that the iodines, which seems to constitute the main stay of treatment in this condition when administered for long periods and in proper dosage has utterly failed to produce any favorable change in the arterial condition in many cases, but on the other hand, has frequently augmented the distressing gastric symptons so often present, would lead us to suspect its employment as empiric rather than rational.

Digitalis, one of the most dependable as well as one of the most abused drugs in our armamentarium, is of doubtful value. Some urge its use in the early stages, nearly all concur in the opinion that its employment in advanced myocardial change is contra-indicated and especially so if bradycardia and high arterial tension is present.

Some authors have advocated its administration in combination with the nitrites, though the justification of this method is some what obscure.

It has been shown by McKenzie (British Med. Jour. Mch-Apr. 1905) that its action is that of a universal depressant of all the heart functions, and that its action and effect is due to the fact that it is a direct muscle poison.

Its adminstration in very moderate doses has frequently produced death according to Duroziez, who produced a series of cases in proof of this assertion.

Goepp (Am. Med. Sep. 3, '03) considers its administration absolutely contra indicated in all stages of the disease.

It would seem that the administration of such a drug with its well known toxic action aud cumulative tendencies would be hazardous if continued for long periods. On the other hand, the almost constantly increased blood pressure existing in these cases would in-

dicate the exhibition of the nitrites for long periods and increasing doses if tolerance seems to be established, combined with physical and mental rest and such dietary and hygenic measures as will contribute to the greatest physiologic rest to the overworked heart.

Under this treatment alone, the dilitation which may be considered a primary and very probable predisposing factor in the production of tissue changes in the myorcardium, may be combatted.

In the treatment of this condition as in all others of obscure path ology, some very fantastic methods have been exploited. This is strongly evidenced by Heitz (Lyen Medicale Dec. '05) on the revival of the carbonic acid bath in the treatment of myocardial disease.

While such a method of treatment might exert an evanescent effect upon the size of the heart when dilitaion is not extreme, or when the element of hypertropy is not present, the probability of a permanent benefit is extremely slight,and even if pronounced benefit were to accrue from its employment, it is so difficult to apply to most cases that its practical employment could seldom be accomplished.

In commenting on Schott's use of the warm carbonated brine baths,Thompson (Practice 1900) says, "It is claimed for the Nauheim treatment that it lessens the area of cardiac dullness slows and strengthens the pulse and respiration and relieves local congestion in lungs, liver and other organs"(all of which may be achieved by the simple warm bath) " general arterial pressure is raised and the skin and peripheral circulation stimulated".

The method of Schott of strengthening the heart by carefully graduated exercises is rational and is brilliantly successful in some cases, but it has the objection of being unscientific inasmuch as the strength and re-cuperative capacity of a given heart are unknown quantities, and even after apparent progressive improvement for a time the heart may rapidly fail or sudden death supervene. The method is not available for general practioners, as it should be employed only under the direct supervision of the physician in those cases where its employment is demanded.

The indiscriminate use of cardinants in these conditions cannot be too strongly condemmed. It would be just as logical to apply the whip to an over worked and exhausted horse without lightening his burden, as to attempe to relieve an overworked heart from myocardial disease by any drug calculated to stimulate its action except perhaps to tide over a brief crisis. The employment of drugs to strengthen the heart's contractile force results only in an increased blood pressure and increased expenditure of cardiac energy.

What the over worked animal needs is rest, and a lightening of

his load. What the weakened and over taxed heart needs is the same, there is no difference in the principle.

At first glance, the administration of depressants as aconite and veratrim in weakness and irritability of heart would seem to invite disaster, yet in many of these cases showing progressive failure of the heart muscle with irritability small doses of these frequently result in the amelioration of symptoms that would be augmented by the use of cardiac stimulants.

Remarks relative to the prognosis of this condition seem uncalled for.

It is usually unfavorable uncompromisingly so to ultimate recovery though regulation of habits and manner of living may prolong life. It may be said that the prognosis is relatively more favorable in elderly than in youthful patients, partly because the habits of the former are more quiet and the heart is able to meet the demands of the condition of physical decadence.

In youthful subjects it is less able to meet the requirements of a vigorous body with the frequent sudden muscular demands made upon it.

Added to the prognosis of uncompensated valvular lesions, the extra hazard of deteriorated heart muscle and the numerous conditions that attend it such as angina pectoris, heart rupture, cerebral anaemia or coronary occlusion must be considered.

The most trifling intercurrent affections may prove fatal. In my experience, those cases exhibiting marked gastric irritability pursue a rapid and uniformly fatal trend.

Carefully reviewing the entire subject the following conclusions in brief seem justified.

First—While many diseases, age, sex, habit and mode of living may be regarded as possible etiological factors in the production of myocardial disease of fibroid type, they are not essential, as its occurrence independent of any determinable predisposing cause is so frequent as to show conclusively that its origin may be independent of such factors.

Second—That the mechanism of these changes in the heart muscle has not been clearly defined, but it is more or less a theory and hypothesis requiring closer observations and a more thorough study of their method of production.

Third—That arteriosclerosis of the peripheral trunks in heart lesions, may not be accepted as a presumptive evidence of disease of the myocardium except in such cases as admit of absolute exclusion of endocardial implication, and even in such, its existence may be considered as only of presumptive value.

Fourth—That the mechanism of sudden death in these cases (exclusive of rupture) must be due to sudden and absolute inhibition of contractile impulse resulting in asystole, and that its manifestations exhibit so close an analogy to those of the Stokes-Adams Syndrome, as to permit a reasonable assumption that the same pathological process governs both phenomena, which assumption is so far sustained by the similarity in pathological findings.

Fifth—That fibrotic changes may be considered as a result of a cycle of three events.

(a) Sclerosis of the coronary arteries resulting in deficient blood supply, I. E. anaemia of the heart.

(b) Dilitation the direct result of anaemia from weakening of the heart muscle.

(c) Fibrotic change due in part to the primary coronary arteritis and in part to the dilitation which lengthens the course and diminishes the caliber of the cardiac vessels.

Sixth—That fibrotic changes, when once established, are permanent with a tendency toward progression,are unifluenced so far as known by any method of therapy so far as the established changes are concerned, but under proper hygenic conditions in their earlier stages, progressive tendencies may be overcome.

Seventh—That symptoms when present are so vague and may be applicable to so many other cardiac derangements as to afford merely presumptive grounds for a diagnosis.

Eighth—That the use of all cardiants in general and digitalis in particular, that stimulate the contractile power of the heart without lessening the peripheral resistance, are ill-advised and irrational and tend rather to favor than to arrest the progress of the lesion.

Ninth—That opium as advocated by Mussur is one of the most valuable remedies at our disposal in cases where the condition of disturbed compensation give rise to nervousness and apprehension, acting as a tonic to the heart, reducing peripherial resistance quieting nervous tendencies, steadying respiration, allaying dysponoea and giving necessary mental and physical rest.

Tenth—In view of the favorable reports from the use of cardiac depressants in selected cases, the cautious exhibtion of such drugs as aconite and veratrim is justified if administered to small doses and their effect closely watched, as there are undoubtly cases that experience distinct benefit from their administration.

SURGICAL TREATMENT OF DETACHED RETINAE.

By G. W. MASER, M. D., Parsons, Kansas.

Read Before the Medical Society of the Southwest.

Four years ago I reported at the Wichita meeting of the Kansas State Medical Society, a case that had been operated upon for detachment of the retina, with the result of restoring sight. This case has remained cured, the sight remaining good to the present time, and must be regarded as a permanent cure.

This year I have done the operation six times on two cases. These cases were of more than ordinary interest on account of the number of operations made on two eyes before reattachment was secured. The conclusions reached were that we should not be discouraged by a failure from a single operation, but should make a number of them, should a failure or partial success be the result of the first. Again, the site of the operation is so far removed from the important eye centers, that is, the ciliary region, that the danger is reduced to the minimum. With ordinary care, the danger is not nearly so great as would attend an operation for cataract, or even an iridectomy.

The results of the treatment of detachment of the retina have been most discouraging, the cures, if any, have been spontaneous and not the result of any form of treatment. A careful research of the literature on this subject fails to describe the operation as made on these cases, the report of which follows in this article.

I do not claim priority for this operation. It has been copied from the operation made by Mr. Lang, of the Royal Opthalmic Hospital, England. The results have been so encouraging that the method should become more widely known to the ophthalmologists of this country.

Mr. Lang had operated on two cases, the operations being in the nature of an experiment, while at the same time not subjecting the patient to any risk as they were practically blind, and no other plan of treatment offered any chance of success.

The result of the operation on the above two cases I do not know, on account of the short time I had of observing them.

The class of cases operated on must be selected. No good results would be expected from a detachment caused from a tumor, be it benign of malignant. The operation could only be successful where the detachment was caused by the pressure of serum between the retina and choroid, and before the retina had lost its function.

Just how long the retina will retain its function after detachment, is not known, but in one of my cases the operation was made in four years after the diagnosis of detached retina, with considerable improvement in sight.

This leads us to recommend operative treatment of detachments of long standing, if there is fair light perception.

The causes of detachment are, as a rule, obscure. Aside from those caused from traumatism and tumors of different kinds, as a general rule no cause can be found, and whatever theory is advanced remains only a theory, and the pathologist has still to find the real cause. When this is found, we may determine the proper medicinal treatment. We do know that it is more common in males than females. It is more frequent in myopic eyes, owing to the stretching of the choroid and sclera. Some authors state that more than fifty per cent of the cases occur in myopes. It may be found in cases of general debility, when the entire system is weakened from whatever cause.

Various methods of treatment, both medical and surgical, have been tried, but the results have been disappointing. Most cases have been treated by the use of diaphoretics, chiefly pilocarpine, administered hypodermically, together with bandaging the eyes, and the recumbent posture. Setons, blisters and leaches have been used with little or no success. As far back as 1859 Sichel introduced the plan of tapping the subretinal fluid by a puncture of the sclerotic and choroid.

In 1863 Von Graefe recommended discission of the retina, in three years had employed it fifty times, but had no lasting benefit in a single case.

De Wecher, in 1877,tried to keep up a continuous drainage of the subretinal fluid by passing a fine gold wire through the sack and leaving it in position, thinking the retina would become reattached, but in place of good results, he found that this treatment sometimes caused sympathetic disease in the other eye.

In 1890, Galezonski recommended the plan of entering a catgut beneath the retina and stitching to the choroid. This plan was a failure. The same author tried aspiration with a syringe, but the plan was a failure. He also tried an iridectomy without success.

Deutchman, in 1895 proposed the operation of cutting with a double edged knife, the sclera, choroid, and retina, into the vitreous space, pushing it to the opposite side of the eyeball, cutting to both sides. His aim was to divide any adhesions or bonds that

might be formed in the vitreous body. No statistics are given of the result of this treatment.

Fox, in his work on the eye, reports no cures by any method of treatment.

Norris and Oliver report 789 cases, with no cures by surgical treatment, and only two cases regaining function by medicinal treatment.

Noyes, Juler and De Schweinitz report no cases cured from operation, neither does Mittendorf.

Roosa reports improvements in some cases, but recommend operative treatment only after other treatments have failed.

Nettleship does not report cases cured by operation but recommends it in recent cases.

Ball reports cases cured by Staerkle of Basel, by means of injections of salt solutions, the strength being from 2 to 10 per cent. He treated twenty-three cases, having improvement in twenty cases and complete reattachment in three.

Dor of Lyons, claims fourteen complete recoveries in twenty-one cases, using a 20 per cent salt solution. The author does not state whether the injections were made in the vitreous or not.

The operations that I have made were for the purpose of creating a ragged wound in the retina to produce inflammation, with exudation enough to unite the retina to the choroid. Following the operation, the eyes are bandaged and the patient is to lie quietly in the recumbent position for about one week.

The different steps in the operation are, a triangular flap is made in the conjunctive at a point between the attachment of the recti muscles. After the hemorrhage has ceased, and the clear sclera is seen, a Von Graefe cataract knife is pushed through the sclera, choroid and retina, well into the posterior chamber, then, by turning the knife slightly, the serum is allowed to escape. When the serum is drained, by using the point of puncture as the fulcrum, the retina is further incised. Turning the knife as near to the right angle as possible, the retina is again incised. In this way considerable inflammation follows. This is exactly what is desired, and has been followed in all my cases by a reattachment at the point operated upon, but not of the entire retina. That part at some distance from the operation has failed to unite when the separation has involved more than half the retina. A second operation is made after the eye has become quiet and the tension normal. In some cases a third operation has been made before complete union has been established. In no case has there been any dangerous inflammation.

It would seem from the foregoing operations, that the opthalmic surgeon would be justified in reoperating until the reattachment was complete.

The first case I operated on was five years ago. This man was 25 years old, and had recently recovered from an attack of mountain fever, was convalescing slowly, when, without any symptoms referable to the eye, found he was blind in the right eye, vision being reduced to 1-200. Ophthalmoscopic examination showed a detachment at the lower third of the retina. The operation was made two weeks after the detachment occurred. His vision three months later was 20-30 and has remained good since that time.

Another patient, Mr. H., age 42 years, occupation coal dealer, had been blind in the right eye for about six years. Had a divergent squint in this eye, pupil normal. Had some kind of an operation made on this eye in Omaha. What was done the patient does not know. The ophthalmoscope showed a detachment of the lower half of the retina. Could see a light when held directly in front of the pupil, but not when held above the pupil.

About six weeks previous to his consulting me, the patient began to see black spots in front of the left eye. Sight in this eye remained good till several days before he came to me. Could see as well as usual one day, and the next day was unable to recognize his friends or attend to his business. Ophthalmoscopic examination showed a detachment of two-thirds of the retina, mostly on the temporal side. Patient was unable to see the flame of a candle when held on the nasal side of the eye, and could count fingers at two feet. Tension normal.

January 30, 1907, the first operation was made on this eye, and one month later he could count fingers at fifteen feet. The retina was attached at the point operated on, but some detachment remained at a lower level. Another operation was made February 16th. This was followed by an increase of vision to 20-200. On May 11th there still remained a small detachment at the lower part of the retina, and the third operation was made. On July 8th, the examination showed a perfect reattachment of the entire retina, the vision being 20-100. At this time an operation was made on the right eye, followed by improvement in vision from perception of light only, to the counting of fingers at six feet. September 27th examination showed retinal bloodvessels small, blood supply deficient and one-third of the retina detached at the lower part. A second operation was made on this date, and on October 1st, the sight had doubled.

The third case, Mr. F., age 53 years, occupation real estate

agent, suddenly noticed that he could not see with his right eye. Thinks the trouble came on in the night. Had a detachment of the upper third of the retina. There was no exciting cause found in the history. The man was in good health generally and had fair light perception at the lower and inner portion of the eye. First operation was made on May 15th, 1907. On the 23rd the vision was 20-100. Some detachment remained on the 28th, when a second operation was performed. I did not see the case again until July 3rd, when the third operation was made on the small patch of detachment at the lower part. Examination with the ophthalmoscope on September 17th showed the bloodvessels of the retina atrophied. The retina was attached, with a small opaque patch at the lower part, the optic disc normal, vitreous clear,but the vision was reduced to fair light perception.

I am unable to form an opinion as to the cause of the poor vision. My experience has been most encouraging, having succeeded in restoring sight in three out of four cases operated on. The operation as made, promises good results, especially if made early, while the retina retains its function.

RATIONAL TREATMENT OF PNEUMONIA.

By DR. J. D. WALTHALL, Paola, Kansas.

Read Before the Southeast Medical Society.

While it is the purpose to make this a practical paper, it will be necessary to review the subject in general to appreciate the conclusion.

Pneumonia is an acute, infectious disease of the lungs. Due to the invasion of a variety of bacteria producing an inflamation and pursuing a course more or less typical; and is manifested by a variety of symptoms due in part to the absorption of toxins from the lungs.

The name would indicate that it is a disease of the lungs but we could not study the subject in its entirety without considering its effect upon the other vital organs.

Croupous, fibrinous, interstitial, and lobar-pneumonia are differentiated from catarrhal bronchitis, bronco and lobular-pneumonia by the character and location of the inflamation. It is estimated that 7% of all deaths are from pneumonia which outranks tuberculosis in its rate of mortality.

As a matter of statistics I would call attention to a clipping

from the Kansas City Times of February 15th., entitled Deaths in Topeka Last Year. "The total number of deaths here last year was 670. Pneumonia and organic heart disease shared first honors in reaping the harvest of death. Each of these diseases caused sixty deaths. This is the showing made by the vital statistics for the year collected by J. D. Pattison, sanitary sergeant, for the state board of heath. Tuberculosis of the lungs comes next with forty-nine deaths. Diphtheria claimed thirty-one victims. Senile debility caused thirty-eight deaths."

The most potent predisposing causes, are unhygenic surroundings, previous disease, old age or alchoholism.

The exciting causes would be anything that would lower the resistance of the body against the invasion of disease germs, such as fatigue, irregular meals, loss of sleep and exposure to sudden or continued cold.

The pneumococcus, the pneumobaccillus and the diplococcus pneumonae are to be found in the lungs and other fluids and tissues of the body.

According to "Netter" these bacteria are to be found in the mouths of 20% of healthy individuals.

The different stages of pneumonia are engorgement, hepatization, and resolution, in the first there is a combination of congestion and oedema,when the lungs become distended, heavy and of a dark red color, produced by injected capillaries,swollen epithelial cells and an accluded alveoli. This stage usally lasts about 24 hours but may continue for several days.

In hepatization the lung presents the appearance of the liver and is increased in weight three or four times, this stage usally begins on the second or third day. subsides after the crisis, and is followed by resolution, but if the consolidation be too long continued or the inflamation too severe,due to putrifactive bacteria, there is death of the part and an abcess is the result.

Syptoms: The onset is usually sudden,ushered in by a chill,forlowed by high temperature, which may be preceded by a nasal or pharyngeal catarrh and slight malaise.

This may or may not be accompanied by pain as the inflamation approaches the pleura.

Dysponea is another important initial symptom due to the pain and to the engorged condition of the lung, suggested by a frothy, bloody, vicid, sputum. Coarse, fine, moist and dry rales, can be heard over the affected parts. The cheeks are flushed, skin dry and hot, expression anxious and the pulse frequent, full and strong:

there is headache, backache, loss of appetite and thirst, scanty high colored urine and constipation.

Resolution generally takes place from the fifth to the eighth day though it may come sooner or later.

The temperature falls by crisis or lysis, during which the patient perspires freely and the general conditions improve fast.

Physical Examination: We usually find the patient on his back or affected side in case of pain, his nostrils expanded on inspiration, his lips and nose purple, features swollen, and very restless.

The chest has less expansion and the intercostal spaces are very apparent the abdominal breathing is increased, the percussion note of the congested lung is quite as resonant as usual or may be tympanitic. The hepatized lung shows a dullness or may show a high pitched tympanitic sound if the consolidated lung is separated from the chest wall by air.

After the crisis, resonance reappears although it may be delayed several days, while the patient is convalesing favorably.

On auscultation, during the period of congestion, coarse and crepitant rales are to be heard.

As the lungs becomes consolidated, the crepitant rale is replaced by bronchial breathing, bronchohophony and sometimes egophony.

These accidental sounds are replaced by the "Crepitus Redux' or moist rales.

The condition of leucocytosis indicated the course and severity of disease.

An increase of the number of leucocytes indicates an invasion of the disease in new area while a diminution fortells the crisis.

Thus far this paper has dealt with idiopathic cases of pneumonia and touched on the symptons of the other organs involved, but frequently the attack on the lung is secondary to other diseases, the variation in characteristics is explained by different bacteria producing the inflamation.

Pneumonia occuring in typhoid and malarial fevers, erysipelas, septicaemia and in various other infectious diseases, shows the same infection as characterize the disease it complicates.

This class of cases follows no type, is subject to the disease of which it is secondary and may last but a few hours: on the other hand resolution may be slow, suppuration frequent and attended with a great mortality.

Ephemeral or abortive cases are those that terminate in convalesence in four or five days.

Case: Child eight years old, complete engorgement, temp. 103 pulse 140, respiration 44, No thoracic breathing, active stimulation general and local: corrected nearly all the symptoms in 24 hours.

The diagnosis is ordinarily very easy except in central pneumonia and in children. It is to be diffentiated from acute oedema by the absence of fever, general distribution of the rales and the associated cardiac disease. It may be mistaken for acute tuberculosis, but the history of the case would usally be sufficient. The presence of the bacilli and the protracted course of the disease would enable a diagnosis to be made, or it could be mistaken for acute pleurisy with abundant exudation, but the ordinary rules for physical examination of both diseases would make the diagnosis clear.

The prognosis is necessarily grave when we remember the number of vital organs involved.

According to Frankel and Reiche from 16 to 23% die, it is more favorable in children but in cases above 60 years it reaches 50 to 80%.

The rate is high as the percent of lung tissue involved.

A few cases die before the lung solidifies, but death usally comes just before the crisis is due.

Unfavorable symptoms are progressive, increased frequency of pulse and respiration, tracheal rales, prune juice sputum, coma, delirium and muscular tremor.

From this hasty review we see the self limited type of this dissease.

In view of the various stages, the duration degree of severity of each, the rapidity with which the patients may pass from one to the other, the wide difference of treatment in each, the various effects of disease on the different types of patients, and many other peculiarities admonish us that the best results will be obtained from treating the patient rather than the disease.

I might impress this subject by pointing out a few common mistakes,it is true that antipyretics, heart sedatives blood-letting and etc., will relieve the symptons of the first stage in most cases of themic pneumonia, but it is a great mistake to continue this treatment throughout the disease.

The doctor who attended our family when I was a boy had no other treatment than veratrum, to maintain about the normal pulse rate, and strange to say a fair percent recovered. This was but a step in advance of the continued blood-letting till the patient died or recovered in spite of the treatment.

We have had other extremes carried to the extent of producing

results almost as bad. That stimulants are begun too soon and continued to produce toxic effects, there can be little doubt.

I saw a case of intoxication from alcohol in the second stage of pneumonia.

Dr. Green of Olathe reported a case which from too long continued use of digitalis produced death from paralysis of the heart in systole.

Recognizing the infectious etiology, its local effect on the lung and the corresponding involvement of the heart, the blood and the nervous system, and with an intimate acquaintance with the therapeutic agents, fulfilling the special indication of the pathologic symptoms present, would in my opinion constitute the rational treatment of pneumonia.

SOME NOTES ON THE RECENT PREVALENCE OF SMALLPOX IN ATCHISON COUNTY.

By E. B. KNERR, M. D., Health Officer, Atchison, Kansas.

Read Before the Atchison County Medical Society, April 14, 1908.

Members of this society will rec ll that at the Effingham meeting in October 1, 07, I read a brief paper on the use of formaldehyde in the treatment of smallpox. I may say that the views presented in that paper as to the prophylactic and abortive action of formaldehyde on smallpox have been fully supported by subsequent observation. I am fully convinced that formaldehyde does have a preventive and delaying effect on the disease, but its influence is brief and only effective during administration.

The only known really effective preventive for smallpox is vac cination. I am fully convinced of this. In all cases where I could get a clear vaccination no smallpox developed, and almost invariably where vaccination was refused the disease went through the whole family.

In a family anywhere a case of smallpox developed all the unvaccinated who had been exposed took the disease, sooner or later. and usually in a light form where formaldehyde had been used faithfully, otherwise more severely. Children of unvaccinated parents and themselves never vaccinated, take the disease severely. Otherwise children as a rule have the disease very lightly. The only pitted child in over 300 cases that have come under my observation was a child of unvaccinated parents. Vaccination of parents undoubtly attenuates the disease for their children born subsequent

to the vaccination. Fortunately for the children of this epidemic their parents had mostly been vaccinated because of previous epidemics.

But little or no pitting results from the prevailing form of smallpox. Of about 330 cases that have come to my observation since last May only two cases show distinct pitting, one the child of less than six months just referred to, and a student of Indian extraction at St. Benedicts College. The great majority show no evidence of the disease a week or two after convalesence. Some show reddish or brownish blotches usally somewhat indurated to the touch, and these disappear entirely in the course of a few months.

The discoloration yields promptly to applications of hydrogen peroxide.

No fatalities have occured in this county, and no bad effects have been noted, with but one exception. In one case of the St. Benedict student who shows a slight pitting there appears a weaken ing of the subscapularis muscle and other attachments of the right scapula, which condition has arisen during his convalescence from the smallpox.

Whether this weakening is secondary to the disease may be questioned.

The most unfortunate circumstances of the present form of smallpox is the man imposed feature of it, the severe quarantine which the law demands: and next to this is the unwarranted prejudice which exists against the disease, in its present form at least.

The quarantine is bad because it is unnecessary and imposes upon the afflicted family needless hardships. With the quarantine the wage-earners of the family are detained and the family revenues are at once cut off. This is certainly an unjust imposition, especially in view of the fact that in all likehood only the individuals actually having the disease can transmit it to others.

If such are isolated and the unafflicted are vaccinated and make pretty liberal use of formaldehyde as a daily disinfectant, there is no likelihood whatever of the disease being transmitted,and the well members of a family could come and go about their accustomed business with perfect safety to all their associates. Under such management the present form or smallpox is not so much to be feared as measles, for in vaccination we have an absolute preventive.

It should be most earnestly advocated that the state of Kansas have a compulsory vaccination law, not only for the benefit of the ones vaccinated but also for the modifiying influence on the disease for the next generation. Also the quarantine requirements for smallpox shonld be modified to be no more severe than for scarle-

tina or diphtheria. Isolate the patient, disinfect everything that comes from him, vaccinate all other members of the family at once, but detain no one so long as he is well. Under universal vaccination the community would be vastly more secure from smallpox and the modified quarantine advocated would be a hardship to no one.

Even now without a compulsory vaccination law in Kansas, I would advocate the quarantine for smallpox be modified as above indicated, for it is a known fact that vaccination does prevent smallpox,and the privilege of vaccination is open to all as a voluntary matter. Should anyone refuse to be vaccinated it's his own concern if he wishes to run the risk of getting the smallpox, and if he contract the disease he surely has only himself to blame, having refused a clearly demonstrative preventive.

In many of the cases that have come to my observation the history of contagion is obscure. Still I am convinced that the disease is transmitted only by the afflicted,either by personal contact or by contact withsome object that the afflicted have closely handled,such as bedding, wearing apparel, drinking cups, tableware, etc.

As a rule the victims protest that they have not the least idea where they could have been exposed. Some of these are wilfully ignorant, as I have subsequently learned. For instance,one young man could give no account of his contagion, but I learned by side investigation that two weeks prior to his eruption he had danced with a young woman of the Missouri side who at the dance was in the eruptive stage of smallpox. Another virtuous victim had been a Saturday night companion in a notorious rooming house of this city where some of the beds were infected.

And I have a suspicion that not a few cases of professed ignorrance could have a true explanation in a like manner. A number of cases were spread from the schools, more particularly from the parochial than from the public schools. This is explained by the fact that vaccination was more general in the public than in the institutional schools.

By the way of summary I gather from the past year's experience with smallpox in about 330 cases in this county.

1st, that the present form of the disease is in no in sense a dangerous one. There have been no fatalities and no serious sequellae in this county.

2nd,that the disease is transmitted only by the afflicted patients themselves personally or by close association with articles used by them: that an unafflicted second party will not carry the disease.

3rd, that vaccination is an absolute preventive to the disease.

4th,that the present quarantine law for the smallpox should be modified to require only isolation and detention of persons actually having the disease.

5th, that it should be generally recognized that the unvaccinated are alone responsible for the existence of smallpox, and the odium of the contagion should rest with them.

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OF THE
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JAMES W. MAY, - - - - EDITOR.
J. E. SAWTELL, } ASSOCIATE EDITORS { CHAS. S. HUFFMAN.

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The Journal was established in June, 1901, by a publication committee at Topeka. In May, 1903, Dr. G. H. Hoxie was elected editor and served four years. In January, 1904, it incorporated the Wichita Medical Journal, owned by Drs. W. H. Graves and G. K. Purvis, and the Western Medical Journal, owned by Dr. A. J. Roberts, of Ft. Scott. In March, 1908, it incorporated the Wyandotte County Medical Journal, owned by Dr. James W. May. It is now printed in Kansas City, Kansas, and appears the first of every month. Correspondence should be addressed to the editor. Editorial office, Kansas City, Kansas.

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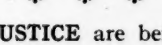
EDITORIAL

That the personality of the physician has a great deal to do with the successful management of cases seems to be without question. The art of instilling confidence of his ability into the patient helps a great many cases and impresses them with the confidence of a successful termination of their disease. This is the whole cloth of Christian Scientists and when the physician has perfected himself in this art he has incorporated their art in his profession and robbed the Scientists of their armementarium *sans* the idiotic features.

That the free clinics of the large cities robs the medical man of a great many pay cases is another fact which cannot be disputed. There are many cases taken care of by the free clinics that are abnndantly able to pay. To get rid of this class of patients is a condition hard to be brought about. Some system of finding out the financial condition of so-called free patients will have to be evolved whereby the deserving and the undeserving can be placed in separate classes and justice given to all.

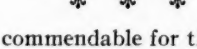
The Wyandotte County Medical Journal has been absorbed by the Journal of the Kansas Medical Society and the latter will hereafter be published in Kansas City, Kansas. The efforts of the present editor will be to make our Journal second to none of the State Journals of the Country. It is now the only medical journal published in the state and in the unifying of these medical interests good results should be obtained.

The physicians of this western country are slowly awakening to the fact that milk infection is the cause of a large per centage of the deaths from gastro intestional disorders, tuberculosis, etc. This fact can be attested by the activity in some of the larger cities as regards milk inspection. St. Louis now has between 60 and 70 inspectors, examiners and board of health employes and the results obtained in procuring clean milk are gratifying. Kansas City is also providing for milk inspection on a large scale and it is only a question of time until the smaller cities will follow the example. When this mode of infection has been eliminated a great step in preventative medicine has been brought about.

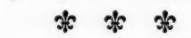


TRAVESTIES ON JUSTICE are being enacted almost daily in the courts throughout the country. It seems that all a man has to do to clear himself after committing murder is to set up a plea of insanity and the jury promptly brings in a verdict of acquittal. The physicians in a large measure are responsible for this condition of affairs which places a premium upon crime. One has but to consult the records of many of the late murder cases to realize this appalling fact. The physicians are at fault, why, because they qualify as insanity experts and one set testifies for the state as to one condition and along comes another set whose testimony diametrically opposes the other with the result that the jury has to exclude the insanity experts testimony and settle the question for themselves. It seems ridiculous that a man should be adjudged insane who never before had exhibited any signs whatever of it, but simply during a heat of passion destroys the life of another. If this is insanity then it is the exception in place of the rule to find a person of sound mind. The only just and equitable way for the courts to help eradicate this evil is to appoint a commission of three or five experts on insanity and exclude all other expert testimony. The border line of insanity in some cases is so small that experts may disagree, but in the vast majority justice will be better and truer served by this procedure.

The ophthalmo tuberculin test for tuberculosis is destined to meet a long felt want. Its greatest field of usefulness will be in the early obscure cases of tuberculosis when the internist and pathologist are unable to make so early a diagnosis. It will enable the clinician to outline a plan of treatment early in the disease with the corresponding benefits of early treatment. Most observers are of the opinion that it is harmless and that the effects quickly subside. It should not be used however in eyes, which have any existing inflammatory diseases.



Would it not be commendable for the Kansas Medical Society to adopt a resolution requesting the newspapers of the state to refrain from publishing the names of physicians concerned in the treatment of accident cases, surgical operations, etc. This resolution sent to all the newspapers would eliminate largely the notoriety *ad nauseum* given physicians of more or less repute. What can be more disgusting to the ethical medical man than this fake advertising which many times is forced upon him.



This is an era of experimentation. Almost every Journal of Medicine and Surgery contain long scientific articles exploiting theories, new in name, but old in fact. As far in the past as pathology has been taught, the theory of phagocytosis has been studied. That, in the presence of disease, there is a continual conflict going on between the specific bacteria and the leucocytes may be demonstrated, and has long since been illustrated in malaria, where the plasmodium invades the corpuscle, and the proper remedy retards and checks its destructive work. We designated this as the process of raising the physiological resisting power within the body against the pathological tendency. We give antidotal treatment which destroyed the plasmodium toxins, and specifics to repair the damage done by them. In other words we were raising the "opsonic index" before the term was invented, but we were not capable of giving scientific explanation as is illustrated in the following article (partly quoted) by Charles Frederick Boldnon, M. D., of New York, in the International Journal of Surgery for March, 1908:

The early work of Nuttall and others on the bactericidal action of normal serum and Pfeiffer's demonstration of the bacteriolysis of cholera and typhoid bacilli by immune sera in the absence of cells, formed the chief basis on which rested the humoral theory, which attributed the protection in such cases to the destructive action of the serum on the microbes. It was found, however, that cases of protection resulting from the use of immune serum occurred

where no such bacteriolytic action could be demonstrated; infection with plague or streptococcus may be mentioned as examples. It is now pretty generally accepted that immunity in these cases is due largely to the phagocytic action of the leucocytes. As far back as 1858 Haeckel had observed that particles of indigo injected into the veins of certain molluses could shortly afterward be found in the blood cells of the animal. However, the significance of this and other observations was not appreciated until Metchnikoff, in 1883, called attention to their bearing on infection and immunity.

The outcome of his investigations was the establishment of the well-known doctrine of phagocytosis, the principle of which is that the wandering cells of the animal organism, the leucocytes, possess the property of taking up, rendering inert, and digesting micro- organisms which they may encounter in the tissues. Metchnikoff believes that susceptibility to or immunity from infection is essentially a matter between the invading bacteria on the one hand and the leucoytes on the other. He realizes that the serum constituents play an important role, but this role consists in their stimulating the leucocyte to take up the bacteria.

Thus, if a highly virulent organism is injected into a susceptible animal, the leucocytes appear to be repelled, and to be unable to deal with the microbe which multiply and causes the death of the animal. If,however,the suitable immune serum is injected into the animal before inocculation, the phagocytes attack and devour the invading micro-organisms. Admitting that the phagocytic plays an important part in certain infections the question must still be considered whether the immune serum has acted on the injected microbes or on the phagocytes. Metchnikoff,we have seen,takes the latter view.

In 1903, A. E. Wright called attention to certain subtances present in serum which acted on bacteria and rendered them more easily taken up by the phagocytic cells. He called this subtance opsonin, and showed that it is present in normal as well as immune sera. By means of absorption tests modeled after those of Ehrlich and Morgenroth, he showed that the opsonin has a specific affinity for the bacteria and none for the leucocytes. The opsonins for staphylococcus prepare only staphylococci for the leucocytes,those for tubercle bacilli only these bacteria, etc. As a result of his observations Wright supposes that the phagocytes play only a passive role, which depends on the preliminary action of the opsonin.

Bacteriotropic subtances. Independently of Wright,though somewhat later, Neufeld and Rimpau, of Berlin, published experiments on the phagocytic effect of immune sera. They also found that in these sera there exists a subtance which has no direct action on the phagocytes, but which can fix itself on the corresponding bacteria and so modify these that they are more readily devoured by the phagocytes. They call this constituent a "bacteriotropic subtance." There is little doubt that this bacteriotropic subtance and Wright's opsonin are identical. Certain differences in the effect of heat are probably to be explained by the differences in the quantities of these senitizing subtances in normal and immune sera.

Opsonins distinct antibodies. It was natural to question whether these"opsonins" were really distinct from the other antibodies.or whether they were perhaps identical with the immune body(or substance sensibilatrice). In a series of papers on this subject Hektoen shows that the former is the case—opsonins are distinct subtances. This is not only indicated by the results of absorption tests but by the fact that, by immunization, a serum can in certain cases be obtained which is opsonic but not lytic, or, in other cases, one which is lytic but not opsonic, Similar experiments have differentiated opsonins from agglutinins.

Structure of opsonins. Opsonins, like agglutinins and precipitins, appear to possess two groups opsoniferous and haptophore. On heating an opsonic serum the former group is destroyed,but the haptophore group remain intact as can be seen from suitable combining experiments. There is still considerable difference of opinion as to the degree of heat necessary to inactivate the opsonins. Once the opsoniferous group has been destroyed it is impossible to restore the opsonic action by the addition of a complementing subtance.

Hence the opsonins are to be regarded as receptors of the second order and similar in structure to the agglutins and precipitins.

The opsonic index. In the study of these opsonins Wright developed the

idea that they were highly important in combating a number of bacterial infections, such as staphylococcus and tubercle. His observation showed that inoculations of the corresponding bacteria produced marked changes in the opsonic contents of the infected individual, and that it was possible to estimate accurately the immunizing effect of such inoculations.

Technic. Wright's technic of measuring the opsonic power is a slight modification of the Leishman method and is as follows: An emulsion of fresh human leucocytes made by dropping twenty drops of blood from a finger prick in 20 c. c. normal salt solution containng one per cent. sodium citrate. The mixture is centrifuged, the supernatant clear fluid removed, and the upper layers of the sedimented blood cells transferred by means of a fine pipette to 10 c. c. normal salt solution. After centrifuging this second mixture the supernatant fluid is pipetted off and the remaining suspension used for the opsonic tests. Such a "leucocyte emulsion" of course, contains an enormous number of red blood cells: the proportion of leucocytes, however, is greater than in the original blood.

One volume of this emulsion is mixed with one volume of the bacterial suspension to be tested and with one volume of the serum. This is best accomplished by means of a pipette whose end has been drawn out into a capillary tube several inches in length. With a mark made about three-quarters of an inch from the end it is easy to suck up one such volume of each of the fluids, allowing a small air bubble to intervene between each volume.

All three are now expelled on a slide and thoroughty mixed by drawing back and forth into the pipette. The mixture is sucked into the pipette, the end sealed and the whole put into the incubator at 37 degrees C. The identical test is made using a normal serum in place of the serum to be tested. Both tubes are allowed to incubate fifteen minutes and then examined by means of smear preparations on slides and spread and stained in the usual way. The degree of phagocytosis is then determined in each by counting a consecutive series of fifty leucocytes and finding the average number of bacteria ingested per leucocyte. This number for the serum to be tested is divided by the number obtained with the normal serum, and the result regarded as the opsonic index of the serum in question. The presence of a high opsonic index Wright regards as indicative of increased resistance. He further states that the fluctuation of the opsonic index in normal healthy individuals is not more than from .8 to1.2,and that an index below .8 is therefore almost diagnostic of the presence of an infection with the organism tested.

Application of opsonic measurments. At the present time Wright has correlated all his observations and built up a system of treating bacterial infections by means of active immunization controlled by opsonic measurements.

The principles underlying his method may be briefly summarized as follows:

In localized bacterial infections the infected body absorbs but small amounts of bacterial subtances or antigens. In consequence of this, the amount of active immunity developed is but slight. Localized infections therefore tend to run a chronic course. The logical method of affecting a cure in these cases is to actively immunize the body with the invading organism. In a number of infections, notably those of staphylococcus, streptococcus, and tubercle, the degree of immunity is measured accurately by the opsonic index. Following an inoculation with the infecting bacteria(dead cultures in salt solution) there is first a drop in the opsonic index, the "negative phase," then, depending on the size of the dose and the reacting power of the individual, there comes a rise of the index, the "positive phase," or a continuation of the negative phase. The former is obtained with proper dosage; the latter with doses too large or too small. In estimating the size of dose given Wright counts the number of bacteria per cubic centimentre of emulsion injected. Thus in the case of localized staphylococcus infections the doses for adults human range from 100 million to 500 million bacteria. In the case of streptococcus the doses are smaller, averaging about 50 to 100 million. The bacterial suspensions are heated to 60 degrees C. for twenty minutes, 0.5 per cent, carbolic acid is added, and tests are made to insure sterility. The time for inoculation is governed by the opsonic index. If the first inoculation has been properly gauged there is a brief negative phase, followed by a positive phase of some days' duration. As this positive phase gradually drops, one gives another inoculation and watches the effect on the opsonic index. If the index drops

markedly and rises but little, the dose has been too large. Or, if the negative phase is slight, and the positive phase slight and transitory, the dose has has been too small. With proper dosage the negative phases are small and the opsonic index is kept fairly well above normal. Hand in hand with this goes on improvement in the clinical symptoms.

Wright and his pupils have published accounts of a large number of cases successfully treated according to this method. The results are reported as especially good in cases of severe acne, multiple boils, lupus, tubercular glands, and bone tuberculosis.

In judging the value of Wright's method we must bear clearly in mind that the essential feature of it is the control by opsonic measurements; treatment of bacterial infections by the inoculation of dead cultures has long been known

The results obtained by most workers in this country fail to bear out Wright's claims for the method. Thus the author finds that the variation in the opsonic indices of several normal persons is often considerable; that opsonic counts based on fifty leucocytes may occasionally vary by more than 50 per cent., and that it is therefore necessary to count from 150 to 200 leucocytes for each test; that duplicate, triplicate and more tests made of the same serum at the same time and under identical conditons so far as one can tell, frequently give widely divergent results; that the opsonic index and the clinical course of the disease do not always run parallel. Cases may do very well and have the index remain low: other cases may do poorly with an increased opsonic index. It is to be noted, furthermore, that some of these variations in results are unavoidable, at least with the present technic.

In keeping with all other writings upon this subject up to the present time, there is a noticeable tendency to ignore the time-tried treatment of disease which indeed has accomplished the opsonic effect, known only by the name of phagocytosis. There is also exhibited a decided lack of confidence in the efficacy of the serum or vaccine treatment, the newness of the procedure being made the excuse therefor.

An occasional article reaching the laity certainly compels that individual to assume that the experimental stage of therapeutics has just begun.

All of the isms, Christian Science among them, have been augmented if not engendered by this prevalent spirit of complete reform in therapy; the transition from the simple to the complex.

CLINICAL NOTES

Ether Applications in Threatened Supperation—Marcille (La Tribune medicale), in cases of adenophlegmon and suppurative parotiditis (mercurial) has applied, with success, compresses of gauze moistened ether, which are covered with a piece of oiled silk, and held in place with a roller bandage. From time to time the corner is lifted and a little more ether poured on the compress.

An Easy method of overcoming the Habit of Smoking—Kolomeitzer (Bulletin medical, 1907) states that if the mouth be rinsed

with a solution of silver nitrate (one fourth of one per cent) strength, it will overcome the desire for tobacco, because after this is done the smoke causes a gustatory sensation, which is most repugnant, and which removes, for a long time, all desire to smoke.

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"Bone Cases" should not be dressed too often after operation. The fine granulations which form are liable to be pulled off with the removal of the packing.—Amer. Jour. Surgery.

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In Cases of Fracture of the Skull.—One should wait for focal symptoms before operation, as a linear fracture without depression is often not followed by serious results. On the other hand no time should be lost in raising a depressed piece of bone or exploring the skull for hemorrhage when any focal symptoms present itself.—Amer. Jour. Surgery.

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For Chronic Rheumatism.—Grassett prescribes (Journal de medecine de Paris, July 28, 1907):

R Chloride of gold and sodium,.....0.10 grammes
Distilled Water,.....300.0 grammes

M. Take a tablespoonsful of this solution with each meal for fifteen or twenty days each month.

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Blindness Following the Injection of Protargol in Lacrimal Sac—F. Park Lewis, Buffalo, N. Y., reports a case (ophthalmic Record, Dec., 1907), occurring in his practice. The patient a woman of 50, having flabby tissues and not a high degree of physical resistance, had suffered for some years from dacryocystitis, with a fistulous opening following an abscess. The sac was washed out with a 25 per cent solution of protargol about 1C. C. being used. No reaction followed and the second day another similar treatment was given. Great reaction followed in a few hours with total blindness in affected eye. Orbital cellulitis and optic neuritis developed the latter ending in atrophy. This condition was brought about by the percolation of the protargol into the surrounding tissues through the ruptured sac intensifying the already existing celluites and involving the optic nerve, either by extension of the inflammation, or by constriction from pressure and in spite of energetic treatment all vision in affected eye was lost. The case which is an unusual one is reported for the purpose of illustrating the possible danger of strong or irritating injections in a sac in which a rupture allows

a possible involvement of orbital tissues and the necessity of exercising extraordinary care under such circumstances.

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Hyposulphites in Dermatology.—Hyposulphites especially the sodium hyposulphite, is an invaluable remedy in parasitic disease of the nail substance, in form of a solution about half an ounce of the salt to a pint of tepid water; the effected nail to be immersed therein twice daily, for ten to fifteen minutes.—N. E. Aronstam, in Central States Medical Monitor.

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Treatment of Chancroidal Bubo—Pressure exerted over a chancroidal bubo by means of a pad of absorbent cotton and a snug spica bandage will at times abort the suppurating process and allow the infected gland to go on to restitution. Simultaneously,however, the ulcer must be kept scrupulously clean and free from all detritus. If absorption is not established within three days, the gland must be incised, curetted and drained.—N. E. Aronstam, in Central States Medical Monitor.

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Septal Deviations.—H. P. Mosher, in the Laryngoscope, state that there are two great causes of deviations of the septum trauma and asymmetry of growth. Of late,he declares, trauma has been held to play only a minor part; the tendency has been to consider unequal development of the two halves of the head the chief cause.

This is true in some cases, but more often the inequality of growth is confined to the bones forming the hard palate,namely, the superior maxillæ, the palate bones and the premaxillæ. Mosher declares that the irregular and delayed irruption of teeth especially the incisors, is responsible for this asymmetry in a large number of cases.

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Aneurism in Celiac Axis Superposed on Aneurism of Aorta.—G. Baccelli based this diagnosis—which was confirmed in every point by autopsy—on the facts that the patient was a syphilitic and hard drinker, who had had symptoms, previously, suggesting angina of the abdominal aorta, what Baccelli calls "angina abdominis," similar to angina pectoris. Both ventricles were enlarged, the right less than the left. The stomach was unusually low and the tumor corresponding to the assumed aneurism in the celiac artery rested on the lesser curvature, while no trace could be found of the trunk of the celiac artery. The aneurism in the celiac artery partially rested also on a much older aneurism in the abdominal

aorta; the patient succumbed to a rupture between them. Baccelli's report was published in the Policlinico.—Jour. A. M. A.

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Curability of Diffuse Septic Meningitis of Otitic Origin.—P. Laurens recently reported a case of otitic meningitis due to enterococci. The germs persisted in the cerebrospinal fluid after all the symptoms had subsided. The patient recovered after a spinal injection of a silver salt. In the discussion of the case at the Medical Society of the Hospitals, at Paris, Lermoyez urged routine bacteriologic examination of the cerebrospinal fluid in every case of suspicious acute meningitis. If polynuclears are found showing evidences of destructive action, the meningitis should be regarded as septic, and without loss of time a disinfectant should be injected into the arachnoid sac to sterilize the meninges before irremediable lesions have been induced. The meninges should also be drained by daily lumbar puncture. The subdural injection of the silver salt or other disinfectant acts on the meninges much more rapidly and intensely than in intravenous injection.

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Metabolism in Gout.—T. Brugsch and A. Schittenhelm sum up the final results of their extensive researches on gout (zeitschrift f. ex. Path. u. Ther., vol. iv, p. 557), as follows: The gouty individual shows an anomaly of the metabolism of nuclein. This consist in:
1. An increase in the amount of endogenous uric acid in the blood.
2. A diminuation in most cases below normal in the amount of uric acid in the urine.
3. The metabolism of exogenous uric acid is deranged. The excretion of uric acid is diminished and delayed with relative increase of excretion of the purin bases. These derangements are not to be referred to imperfect renal function, but to a disturbance of the whole metabolism of the purins which is to be characterized as a diminution of the formation of both endogenous and exogenous uric acid combined with diminished destruction of uric acid. Finally the authors show that by sparing the powers of the system for forming and destroying uric acid these powers may, as in the similar case of diabetes, be favored and increased. These investigations show the fallacy of all those therioes of gout which make derangement of the function of the kidneys a cause of gout.

NEWS NOTES

The American Proctologic Society will hold its annual meeting at Chicago, in June, 1908.

Dr. F. J. Wakeman, of Kansas City, Kansas, a specialist on the eye and ear, died on March 30, 1908, of pulmonary tuberculosis.

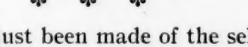
The State Board of Medical Examination and Registration will hold its next meeting at the High School Building, in Kansas City, Kansas, June 11th, 1908.

Dr. A. W. Meyer, of the University of Minnesota and formerly of John Hopkins has accepted the professorship of Anatomy in Northwestern University Medical School.

Dr. A. N. Richards, of the College of Physicians and Surgeons of New York City, has been appointed Professor of Pharmacology and Surgeons in Northwestern University Medical School.

Dr. John B. Murphy has resigned as Professor of Surgery and co-head of the Department in Rush Medical College and has accepted the Professorship of Surgery and head of the department in Northwestern University Medical School and position of attending surgeon at Mercy Hospital.

The thirty-fourth annual meeting of the Mississippi Valley Medical Association will be held in Louisville, Ky., October 13, 14, 15, 1908, under the presidency of Dr. Arthur R. Elliott, of Chicago. The American Medical Association holds its annual meeting at Chicago, June 2,-5th. There should be a good attendance from this State on account of the close proximity of the meeting place and the transportation facilities.



Announcement has just been made of the selection of the orators for the coming meeting, by the President. The address in Medicine will be delivered by Dr. George Dock, Professor of Medicine in the University of Michigan, Ann Arbor; and the address in Surgery by Dr. Arthur Dean Bevan, Professor of Surgery in Rush Medical College, Chicago. The mere mention of these names is enough of a warrant that this feature of the program will be in every way firstclass.

The Association of Medical Editors of America will hold a convention at Chicago, commencing June 1st.

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Correction—In the April issue of the Journal appeared the following: "For your information we would state that Neuro Lecithin has been approved by the Council of Pharmacy and Chemistry." The balance of the article had no connection whatever with the above statement.—Editor.

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The following articles have been added to the list of New and Non-Official Remedies approved by the Council on Pharmacy and Chemistry:

Aromatic Cordial, P-M. Co. (Pittman-Myers Co.)
Oleum-Ricini Dulcis. P-M. Co.
Atoxyl Hypodermic Tablets 1-3 grain, (Koechl & Co.)
Novocaine Hypodermic Tablets, 1-3 grain, (Koechl & Co.)

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It has been decided to combine the annual commencement dinner tendered to the graduating class and the alumni, by the faculty of Northwestern University Medical School, with the alumni banquet to be held during the meeting of the American Medical Association. This dinner will be held at the Illinois Atheletic Club on Michigan Avenue on the evening of June 2. It is hoped that all graduates of the Northwestern Univesrity Medical School will be present at the meeting of the Association and will attend this dinner.

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The Kansas City Veterinary College, located in Kansas City, Mo., is making such improvements in their equipment which will make it second to none of the like institutions of the country. With in the past year one new building for laboratory purposes has been erected and another building is in contemplation. A truly scientific course of instruction is given in this college. The faculty numbers twenty professors. There were 450 students enrolled during the past year.

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NEW MEDICAL SOCIETY.

A Medical Society was organized in Liberal Tuesday, April 7, composed of physicians from Meade, Stevens, Seward counties, Kansas. Physicians from Beaver County, Oklahoma, were also present. The new society is to designate the Tri-County Medical Society of Kansas, and meetings are to be held on the first Tuesday of every month at accessible points determined by a vote of the

society. The next meeting is to be held in Liberal. Temporary officers were elected as follows: Dr. Roscoe Nichols, President, and Dr. T. L. Higginbotham, secretary. The physicians of this part of the state realize that an active Medical Society is an essential to the up-to-date practice of medicine here as elsewhere and a hopeful atmosphere of energy and enthusiasm prevaded the first meeting.

T. L. HIGGINBOTHAM, M. D., Secy. protem.

The McGill University Alumni will hold a banquet at the Great Northern Hotel, Tuesday evening, June 2nd, 1908, during the meeting of the American Medical Association in Chicago. The committee in charge of the banquet is as follows: D. F. MacMartin, M. D., J. Brown Loring, M. D., and Andrew Stewart, M. D.

ANDREW STEWART, M. D.

Member of A. M. A. Alumni Committee.

Special headquarters will be provided at the Auditorium Hotel for alumni of the Medical College of Ohio. There will be a reunion of the alumni of this College Tuesday evening, June 2, 1908, at the Bismarck Hotel, 180 E. Randolph Street, where there will be a smoker and entertainment. Further information can be obtained by addressing Dr. William H. Wilder, 103 State Street, Chicago, Chairman of the resident alumni.

The local alumni of the University of Maryland will give a smoker and buffet luncheon, during the meeting of the American Medical Association in Chicago, on the evening of June 2nd, 1908, in the Victoria Hotel, northwest corner of Michigan Avenue and Van Buren Street, to which their own and all other visiting alumni are cordially invited.

L. D. GORGAS.

Member of the A. M. A. Alumni Committee.

There will be a dinner and reunion of the Harvard Medical Alumni at the Great Northern Hotel during the meeting of the American Medical Association, Tuesday, June 2, 1908, at 6 P. M., to which every Harvard man then in Chicago is earnestly bidden to come. Please notify the undersigned as soon as possible so that proper provision may be made. A register of Harvard men will be kept at the Alumni Headquarters in the Auditorium, where information, etc.. may be obtained.

HENRY F. LEWIS,

42 Madison St., Chicago. Member of A. M. A. Alumni Com.

The members of the Alumni Association of the Western Pennsylvania Medical College (Medical Department of the Western Univ. of Pa.) attending the meeting of the American Medical Association in Chicago June 2-5, 1908, will hold a reunion and Dutch Luncheon at the Tom Jones Cafe, 175 Jackson Boulevard, Tuesday evening, June 2nd, at 7 P. M. All members take notice that this is the only invitation they will receive. Everyone is expected, so do not fail to come and meet your college classmates and friends. Members are requested to register at the General Alumni Headquarters at the Auditorium Hotel, corner Michigan Avenue and Congress Street, as soon as possible after their arrival in the city.

DR. H. E. ALMES.

Member of A. M. A. Alumni Committee.

The Phillips County Medical Society was reorganized March 18, 1908, and the permanent officers are as follows: President, Wm. G. LeRew, Marvin, Kans.; Vice-President, W. W. Scott, Long Island, Kans.; Secretary, D. D. Haggard, Phillipsburg, Kans.; Treasurer, R. M. Tinney, Kirwin, Kans.; Censors: H. D. Brothers, Agra, Kans., 1 year; G. A. Van Diest, Prairie View, Kans., 3 years,; A. G. Davis, Logan, Kans., 2 years. Committee on Health and Public Legislation: J. L. Shewmaker, Phillipsburg, Kans.; John Jeneinx, Prairie View, Kans.; F. E. Richmond, Logan, Kans.

D. D. HAGGARD, Secretary.

To the Alumni of the Kentucky School of Medicine:—During the meeting of the American Medical Association there will be a reunion and banquet of the alumni of our college at the Auditorium Hotel, June 2, 1908, at 6:30 P. M. The members of the faculty will be present, and hope to meet the alumni from the entire country. An attractive musical program is being arranged, and there will be addresses from the alumni and members of the faculty. Address all communications to Dr. J. R. Pennington, Secretary of the Alumni Committee, appointed by the American Medical Association for the Kentucky School of Medicine.103 State Street, Chicago.

On the evening of June 2nd, 1908,an alumnae dinner and entertainment in honor of the visiting medical women of the American Medical Association will be given at the Mid-day Club, First National Bank Building, corner of of Dearborn and Monroe Streets, by the Woman's Alumnae Committee, the Medical Woman's Club of Chicago, and the Woman's State Medical Society. The medical women of Illinois hope that a large representation of women physicians of the A. M. A. will attend this year's session, as they are making a special feature of the Women's Alumnae Reunion. At this dinner several important subjects will be discussed which are of special interest to all women in the profession.

DR. KATHARINE BRAINERD RICH
Member of A. M. A. Alumni Committee.

The County Medical Society met Tuesday evening, March 24, 1908, with the President, Dr. C. R. Silverthorne, at McFarland, with the following doctors present: Drs. Beverly, Johnson, and Meyer, of Alma; Dr. Menard, of Paxico; Drs. Yates and Kemper, of Maple Hill; and Drs. Robler and Silverthorne, of McFarland. Dr. McGuire, an eminent Topeka physician , was present and delivered a very able discourse on medical science in reference to the finding and treatment of diseases. Dr. McGuire is a recognized authority on matters pertaining to the profession and his counsel and co-operation is earnestly sought by his co-workers. The object of the Society in meeting on stated occasions for the exchanging of experiences in reference to their profession is a most commendable one and all reverts to the well being and good of the sick and afflicted. There will probably never be a single meeting of the Society at which some member does not receive an idea or obtain a help that will be of much good in his work among his patients. The organization of this Society is the best thing the doctors of the County have done in many years. At the close of the discussions the guests were invited by Mrs. Silverthorne to gather around the well appointed dining table and were served with a delicious six course supper. The table decorations were large red carnations and ferns. Covers were laid for Doctors McGuire, Beverly, Kemper, Menard, Robler, Johnson, Meyer, Yates, Mrs. Beverly, Mr. and Mrs. H. C. Stieher, and Dr. and Mrs. Silverthorne.

At the short business session held after the supper an unanimous vote of thanks was accorded the Doctor and his good wife for their cordial hospitality.—Alma Signal.